

credited to our area. I do not doubt but that many of the rarer introductions holding places in our manuals rest upon as little, or even less, conclusive evidence than that given by *Delphinium Consolida*. One need look no further than among the near allies to find some pertinent cases — for example, *Adonis autumnalis* and *Nigella Damascena*. *Eranthis hyemalis*, for long years holding a traditional but undisputed place in our American flora because naturalized at Bartram's Garden, Philadelphia and in Painters' Arboretum, near Media, Pennsylvania, is distinctly not above suspicion.

It is to be hoped that those who may feel that *D. Consolida* has not been shown eligible to a place in our manuals will also feel constrained to bring critical attention to bear upon the status of *D. Ajacis*.

ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA.

SOME NOTES ON SPARTINA.

M. L. FERNALD.

IN checking the species of *Spartina* in northeastern America the writer has been surprised to note the recent treatments in the manuals of eastern North America of the coarse smooth salt marsh species. Hitchcock, in the 7th edition of Gray's Manual, following Merrill,¹ treats it as *S. glabra* Muhl., with vars. *pilosa* Merrill and *alterniflora* (Loisel.) Merrill; while Nash, in the 2d edition of Britton & Brown's Illustrated Flora, treats it as *S. stricta* (Ait.) Roth. In the 1st edition of Britton & Brown, Nash, following Gray,² had treated the American plants as *S. stricta* with two varieties, though he had added the luminous note, "Our plant does not appear to be satisfactorily identified with the European,"³; but in the 2d edition, the varieties have been omitted and with them the clarifying note, and all the American plants reduced outright to the European *S. stricta*. Examination of the European plant, however, shows *S. stricta* to differ from all the material from eastern America not only in the very pilose lemmas emphasized

¹ Merrill, U. S. Dept. Agric. Bur. Pl. Ind. Bull. no. 9, 8 (1902).

² Gray, Man. ed. 2, 552 (1856).

³ Nash in Britton & Brown, Ill. Fl. i. 177 (1896).

by Merrill ¹ in keeping the species apart, but in many other characters, which, in view of the recent tendency to reunite the eastern American plants with the European *S. stricta*, it is well to enumerate.

European *S. stricta* has the very short involute leaf-blades distinctly articulated to the firm sheaths, but "they are so readily detached from the sheaths, that by the time the plant is in flower most of the lower sheaths have lost their laminae."² This character is very conspicuous in herbarium-specimens of true *S. stricta* of Europe, in which half the blades have sometimes disarticulated; but in the American plant the long leaf-blade and soft sheath are continuous. The ligule of the European *S. stricta* is laciniate,³ of the American a ring of hairs. And the European *S. stricta* is said by Syme to have the "Stem . . . easily broken," terms which would not be used to describe the American plant by anyone who has vainly attempted to pull specimens from the marsh. In our plant the rhachis is ordinarily prolonged beyond the spikelets; in *S. stricta* the rhachis, though a little prolonged, rarely exceeds the spikelets. In short, *S. stricta* of Europe is quite unlike its American representative in many definite characters.

The plant of the northern Atlantic coast, from Newfoundland and the lower St. Lawrence to New Jersey, *S. alterniflora* Loisel., is, however, apparently inseparable from the authentic European material of *S. alterniflora*. This was recognized by Gray as early as 1856 and the identity has been admitted by many subsequent American and European students. It is unfortunate, therefore, since *S. alterniflora* Loisel. was published in 1807 and *S. glabra* Muhl. not until 1817, that the later name, *S. glabra*, should have been recently maintained for the species, and with a var. *alterniflora* based upon the earlier-published *S. alterniflora*. The latter name, obviously, has precedence as a specific name and the plants of the North Atlantic coast should be called:

SPARTINA ALTERNIFLORA Loisel. Fl. Gall. ii. 719 (1807). *S. stricta*, var. *alterniflora* Gray, Man. ed. 2, 552 (1856). *S. glabra alterniflora* Merrill, U. S. Dept. Agric. Bur. Pl. Ind. Bull. no. 9, 9 (1902); Hitchcock in Gray, Man. ed. 7, 143 (1908).

S. ALTERNIFLORA, var. **glabra** (Muhl.), n. comb. *Dactylis maritima* Walt. Fl. Carol. 77 (1788), not Curtis (1787). *S. glabra* Muhl. Gram. 54 (1817); Merrill, l. c. 8 (1902); Hitchcock, l. c. (1908). *S. stricta*,

¹ Merrill, l. c. 9.

² Syme, Engl. Bot. xi. 5 (1873).

³ Rouy, Fl. Fr. xiv, 26 (1913).

var. *glabra* Gray, Man. ed. 2, 552 (1856). *S. stricta maritima* Scribn. Mem. Torr. Bot. Cl. v. 45 (1894).

S. ALTERNIFLORA, var. **pilosa** (Merrill), n. comb. *S. glabra pilosa* Merrill, l. c. 9 (1902); Hitchcock, l. c. (1908).

The name *Dactylis maritima* Curtis, Enum. Brit. Gr. (1787) seems to have received less attention than it merits. Linnaeus's *D. cynosuroides* (1753)¹ was to some extent a complex; consisting for the most part of the strictly American species now generally known as *Spartina cynosuroides* (L.) Roth, but with the habitat "Lusitania" appended to "Virginia, Canada," thus indicating that Linnaeus confused with the American plants one of the European species. Slightly later (1758), Loeffling, in his *Iter Hispanicum*, published, without mention of the Linnaean species, a very detailed description of another *Dactylis cynosuroides*² which from the description ("Vaginae . . . imbricatae post folia decidua per inferiorem culmum," etc.) is unquestionably the *D. stricta* Ait. Hort. Kew. i. 104 (1789), afterward renamed *Spartina stricta* (Ait.) Roth (1802). Some post-Linnaean English botanists took up Loeffling's *Dactylis cynosuroides* for the Sea Cock's-Foot Grass of Europe; for instance, Hudson in his *Flora Anglica*.³ And when Aiton's *D. stricta* was published in 1789, it was as a substitute for the *D. cynosuroides* of Loeffling and of Hudson, which is clearly indicated by his citation of those authors alone, not of Linnaeus. But a very similar publication, with equally definite citations, was earlier effected by Curtis in 1787, when he published his *Dactylis maritima*. Curtis's publication, under *Dactylis*, was in the briefest possible form: "2. Maritima. H. 43. *Cynosuroides*. R. 393. 4 Sea."⁴ But by inserting the expanded bibliographic citations, as indicated by Curtis's explanation, it becomes:

2. Maritima. Hudson, Fl. Angl. ed. 2, 43, as *D. Cynosuroides* (1778) Ray, Synop. ed. 3, 393, no. 4 (1724) Sea Cock's-Foot Grass.

Dactylis cynosuroides Huds., not L., was the *D. cynosuroides* of Loeffling, and is clearly the *D. stricta* of Ait. as indicated not only by

¹ L. Sp. Pl. i. 71 (1753).

² Loeffl. It. Hisp. 115 (1758).

³ Huds. Fl. Angl. 25 (1762), ed. 2. 43 (1778).

⁴ Curtis, Enum. Brit. Gr. (1787). The writer has not seen the original issue of Curtis's *Enumeration*, which is said to have been a 1-page folio published in 1787. Through the kindness of Miss Marjorie L. Warner of the United States Department of Agriculture, he has learned, however, that in Volume 1 of the *Flora Londinensis* at the Library of Congress, there occurs a 4-page leaflet: "General observations on the advantages which may result from the introduction of the seeds of our best grasses," the 4th page of which is the "Enumeration of the British Grasses," dated at the end: "Botanic-garden, Lambeth-Marsh, August 7, 1787."

Loefling's splendid description but by Aiton's citation. The other component of *D. maritima* Curtis was Ray's no. 4 on p. 393. This was the *Spartum Essexianum, spica gemina clausa* of Petiver's *Graminum Concordium* (1712?), which had been taken up by Ray under the same name, with the citation of various specimens collected by Buddle and others, who were cited by Hudson (ed. 1) under his *D. cynosuroides*. *Spartum. essexianum* is placed without hesitation by British authors (Smith,¹ Gibson,² *et al*) in the synonymy of *Dactylis stricta* Ait. or *Spartina stricta* (Ait.) Roth. There seems no question, then, that the common European species which is generally known as *S. stricta* should be called

SPARTINA **maritima** (Curtis), n. comb. *Dactylis cynosuroides* Loeffl. It. Hisp. 115 (1758); Huds. Fl. Angl. 25 (1762), ed. 2, 43 (1778); not L. *D. maritima* Curtis, Enum. Brit. Gr. (1787). *D. stricta* Ait. Hort. Kew. i. 104 (1789). *Spartina stricta* (Ait.) Roth, Neue Beitr. 101 (1802).

In view of the identity of the American and European *Spartina alterniflora*, it may be worth while to note that among the European specimens in the Gray Herbarium received as *S. stricta* is one from Aquilega, at the head of the Adriatic Sea, which is certainly typical *S. Michauxiana* Hitchcock.

It is also noteworthy that *S. Duriaei* Parl. Fl. Ital. i. 230 (1848) or *S. versicolor* Fabre, Ann. Sci. Nat. sér. 3, xiii. 123 (1850) of maritime sands of Europe is scarcely separable from *S. patens*, var. *juncea* (Michx.) Hitchc. The European specimens can be closely matched by American; and Durieu himself, who, it may be assumed, would be inclined to maintain *S. Duriaei* if he thought it a good species, treated it without reservation as identical with *S. juncea* (Michx.) Willd.—See Cosson & Durieu, Expl. Sc. Alg. ii. 88 (1849). Ascherson & Graebner (Syn. ii. 84), although maintaining *S. Duriaei*, speak of the "jedenfalls sehr nahe stehenden *S. juncea*."

GRAY HERBARIUM.

¹ Engl. Bot. vi. t. 380 (1797).

² Gibson, Fl. Essex. 359, 360 (1862).